

REMARKS/ARGUMENTS

Applicants would like to thank the Examiner for the courtesy extended to their undersigned representative during their telephone interview of June 12, 2009. The subject matter of the rejections was discussed, but no agreement was reached.

Claims 38-74 are pending herein, claims 38, 49 and 70 being independent. Claims 39, 40, 43, 44, 49 and 51 have been amended. New claims 75-78 have been added, with new claim 77 being independent. No new matter has been added.

It is believed that the amendments to claims 39, 40, 43 and 49 are cosmetic only and do not affect the scope of the claims. Claim 44 has been amended to remove a potential for ambiguity therein, by removing an alternatively claimed embodiment therefrom, and by the adding of new claim 75 in which the embodiment removed from claim 44 is presented. The amendment to claim 51 is discussed below.

The § 112 (2d para.) rejection

In the pending Final Office Action, the Examiner rejected claims 38-48 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to point out and distinctly claim the subject matter which applicants regard as their invention. Specifically, the Examiner has taken the position that the claim term “quasi-incompressible fluid” is indefinite, because it would be unclear to one of ordinary skill in the art what is meant thereby. Applicants respectfully disagree with the Examiner and submit that the term is definite and understandable to one of ordinary skill in the art at the time of applicants’ invention.

Before addressing the substance of this rejection, it is expressly noted that the Examiner had previously allowed claim 51, which used the term “incompressible fluid” rather than “quasi-incompressible fluid”. The prior use of “incompressible fluid” in claim 51 was in error. By the

amendment above, this error has been corrected, so that claim 51 now includes the term “quasi-incompressible fluid. Thus, although the Examiner has previously allowed claim 51, the comments made herein are made expressly to include the new reference to “quasi-incompressible fluid” in claim 51 as that term is also used in claims 38-48.

As to the substance of the rejection, applicants have previously pointed out that the term “quasi-incompressible fluid” is defined expressly in the specification (p. 44, lines 8-10 of the application as filed; para. [0187] of the application as published). Specifically, applicants have expressly defined a “quasi-incompressible fluid” as a fluid whose “volume does not vary significantly when the depth of water [to which it is submerged] and thus the pressure increases.” Where an applicant expressly defines a term in the specification, that definition controls the term’s interpretation, even during prosecution. (M.P.E.P. § 2111.01(IV); *Toro Co. v. White Consol. Ind. Inc.*, 53 U.S.P.Q.2d 1065, 1069 (Fed. Cir. 1999) – “Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim.”) The Examiner has not quarreled with applicants’ contention that they have expressly defined the term. Rather, the Examiner has taken the position that his interpretation of the term is not limited to that set forth in the specification (“quasi-incompressible is not limited to the phrase as defined in the specification.” – Final Office Action p. 5). With this contention, applicants emphatically disagree.

As stated above, the express definition of the term “quasi incompressible” *does* govern its interpretation in the claims, and the Examiner *cannot* impose his own definition in contradiction of applicants’ definition. During the aforementioned interview, the Examiner stated his position that, during prosecution, he must give a claim term its broadest possible interpretation. This is incorrect. As expressly stated in the M.P.E.P. (§ 21111):

“During patent examination, the pending claims must be ‘given their broadest reasonable interpretation *consistent with the specification.*’” (Emphasis supplied), quoting *Phillips v. AWH Corp.* 75 U.S.P.Q.2d 1321 (Fed. Cir. 2005).

Thus, the Examiner may *not* give a claim term a meaning which is inconsistent with an express definition found in the specification. Here, the term “quasi incompressible fluid” is expressly defined in the specification, and thus the Examiner’s position that the term is indefinite *despite the definition found in the specification* is improper and must be withdrawn.

Withdrawal of this rejection is therefore solicited.

The § 103 rejection

The Examiner also rejected claims 38-45, 47 and 48 under 35 U.S.C. § 103(a), as obvious over United States Patent No. 4,183,316 (Bennett) in light of applicant’s own disclosure; and claim 46 under 35 U.S.C. § 103(a) as obvious over Bennett in light of United States Patent No. 6,772,705 (Leonard, *et al.*). Applicants have carefully considered the Examiner’s rejection and respectfully disagree with the Examiner’s conclusions. For the reasons set forth in more detail below, applicants respectfully request the withdrawal of this rejection as well.

The following description of the invention is taken from the specification and is provided for the convenience of the Examiner. It is not intended to argue limitations not present in the claims or to argue for an interpretation of any claim term that is more narrow than, or different from, the broadest interpretation of such term as would be understood by one of ordinary skill in the art after a full and fair reading of the specification.

The invention of claims 38-48 is directed to an underwater buoyancy element containing a buoyancy fluid that includes a quasi-incompressible fluid. As explained above, a quasi-incompressible fluid is one whose volume does not change significantly at the depths at which the buoyancy element is used. Furthermore, claim 38 expressly recites that the buoyancy fluid is gaseous at ambient temperature and pressure at sea level and liquid at the undersea depth (with the

temperature and pressure found at that depth) at which it is used. The applied art nowhere teaches or suggests the use of such a quasi-incompressible fluid in a buoyancy element.

The Examiner apparently agrees with this assessment of the prior art, as the Examiner expressly relies upon applicants' own disclosure for this element of the claimed invention (p. 3 of the Final Office Action – “applicant discloses in paragraphs [0022] and [0023] of the published application that the buoyancy fluid is a known compound”). The Examiner then takes the position that the substitution of a known compound, which had never previously been used in a buoyancy element, into Bennett's device would be obvious to one of ordinary skill in the art.

A finding of obviousness requires a showing that there be some “teaching, suggestion or motivation” in the prior art for modifying the prior art so as to produce the claimed invention (M.P.E.P. § 2143.01 – citing *In re Kahn*, 78 U.S.P.Q.2d 1329, 1335 (Fed. Cir. 2006)). Here, the Examiner offers no showing of any motivation in the art to substitute the claimed quasi-incompressible fluid for known buoyancy fluids taught by Bennett. In the absence of a showing of such motivation to make the substitution, it would not have been obvious to do so. M.P.E.P. § 2143(G); *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 415-419, 82 U.S.P.Q.2d 1385, 1395-97 (2007). Here, the Examiner has not offered any such showing of motivation and therefore the rejection should be withdrawn.

Bennett is directed to a variable volume depth control which utilizes a buoyancy fluid comprising two parts: one liquid and the other gaseous (col. 4, lines 33-35). Bennett teaches controlling the depth of an object “by expanding and contracting a working fluid” (col. 2, line 32).¹ It is therefore the very essence of Bennett's teaching that it is preferred to vary the volume

¹ It is noted that Bennett teaches the use of either a single two-state working fluid or two different fluids, separated by a diaphragm **18** (col. 3, lines 10-13). In either event, the working fluid is partly liquid and partly gaseous at the depth desired.

of the buoyancy/working fluid used therein to control the depth of the object that is immersed in the liquid medium by changing the proportion of the working fluid that is in liquid form at that depth. Applicants herein have done the exact *opposite*, by using a quasi-incompressible fluid which is intended to have a volume that *is substantially constant*. Where, as here, a reference contains an express teaching that is inconsistent with a claim limitation, then the reference “teaches away” from the claimed invention. *In re Grasselli*, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983). In fact, that applicants have gone in a direction that is inconsistent with the prior art is evidence of *non-obviousness*. *In re Hedges*, 228 U.S.P.Q. 685 (Fed. Cir. 1986).

As a final point, the use of the quasi-incompressible fluid having the property of naturally being in a liquid state at the depth at which it is to be used means that there is no need for the heating element taught by Bennett, thereby lowering the cost of manufacture of such a device and also avoiding the possibility of having the heating element run out of power, thereby causing the object being supported thereby to sink, as contemplated by Bennett (col. 2, lines 18-21). For this reason, too, it would not have been obvious to modify Bennett to dispense with one of the essential elements thereof.

The Examiner has offered no reason why one of ordinary skill in the art would diverge so dramatically from the path taught expressly by Bennett to use a buoyancy/working fluid that does *not* significantly change volume (*i.e.*, a “quasi-incompressible fluid”). For the reasons set forth above, there can be and is no such motivation, and so the claimed invention is not obvious in light of Bennett, taken alone or in combination with any other reference of record. Thus, this rejection, too, should be withdrawn.

There being no further grounds for rejection, early and favorable action is respectfully solicited.

The amount of \$428.00 was previously submitted in payment for the addition of four new claims, including one new independent claim in excess of three.

It is believed that no further fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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